

**Parry's Tetracoccus
Conceptual Mitigation Plan**

**Orange Grove Project,
San Diego County, California**

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EXECUTIVE SUMMARY

This Conceptual Mitigation and Monitoring Plan (Conceptual Plan) outlines appropriate revegetation measures to mitigate for impacts to Parry's tetracoccus (*Tetracoccus dioicus*) that will result from implementation of the proposed Orange Grove Energy Project (Project). The approximately 8.5-acre project site (Site) is located within a larger, approximately 202-acre property (Property), owned by San Diego Gas and Electric (SDG&E) west of the unincorporated community of Pala in rural northern San Diego County, California.

Approximately 8.3-acres of the 8.5 acre Site will be graded for Project development. The majority of the proposed Site occupies a former citrus grove. However, a small, approximately 0.2-acre area of disturbed habitat is located within in the northwestern portion of the Site where 23 Parry's tetracoccus individuals have been mapped and recorded. It is anticipated that all 23 individuals will be directly impacted by the proposed Project. To mitigate for these impacts to Parry's tetracoccus, the Project applicant is proposing to establish approximately 23 Parry's tetracoccus individuals in an approximately 0.09-acre mitigation area in the northern corner of the Site.

This Conceptual Plan includes the restoration implementation strategy for compensatory mitigation of 23 Parry's tetracoccus individuals on a 0.09 acre portion of the Site. The primary goal of this Conceptual Plan is to ensure appropriate mitigation for impacts to Parry's tetracoccus. Achievement of the performance criteria described herein would create suitable habitat for Parry's tetracoccus and occupation of the site by this species is a requirement for successful mitigation of project related impacts to this species.

This Conceptual Plan presents information on project location and work descriptions, project impacts, proposed mitigation, planting recommendations, maintenance recommendations, monitoring methodology and revegetation success criteria.

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1.0 INTRODUCTION

The primary purpose of this document is to provide site-specific recommendations for meeting the success criteria for mitigating impacts to Parry's tetracoccus that are associated with the construction of the proposed Project. Mitigation for construction impacts to Parry's tetracoccus shall be provided through successful transplanting or revegetation, preservation and management of an equal number of individuals in a native habitat suitable for Parry's tetracoccus within an onsite area. This plan solely addresses revegetation and enhancement of upland habitat suitable for Parry's tetracoccus within the onsite preserve area and should be implemented under the project biologist's discretion in order to meet the applicable success criteria established in Section 6.1 of this plan below.

The habitat restoration and enhancement program for the mitigation area is designed to provide for long-term suitable habitat for use by a the impacted species, which are found in coastal sage scrub habitats in San Diego County. This plan was prepared by TRC to facilitate review of the proposed Project by the California Energy Commission (CEC).

1.1 PROJECT DESCRIPTION

The proposed Project consists of the construction of a 96 megawatt (MW) electric generating plant within the approximately 8.5 acre Site, an approximately 0.3 mile underground electric transmission line interconnection between the Site and the existing Pala substation, an approximately 2.4-mile natural gas pipeline lateral which will connect the Site to an existing SDG&E regional gas transmission main, fresh water pickup station where water trucks will be filled from an existing Fallbrook Public Utility District (FPUD) water main for hauling to the Site, a reclaimed water pickup station where water trucks will be filled at an existing FPUD water reclamation plant for hauling to the Site and Pala substation upgrades as required for interconnection and transmission to the Pala substation agreed upon by the California Independent System Operator (CAISO) and SDG&E.

The Project will supply SDG&E with new generating capacity to support reliability within the service territory. Orange Grove Energy will operate the plant which will employ up to 9 full-time onsite staff. Natural gas fuel will be supplied by SDG&E and electric power generated by the plant will be supplied to SDG&E under a tolling agreement.

1.2 Project Location (Impact Site)

The Site is located off of State Route (SR) 76 approximately 3.5 air miles northeast of Interstate 15 (I-15) (Figure 1). The Site occurs on portions of the southwest $\frac{1}{4}$ of the southeast $\frac{1}{4}$ of Section 29 and the northwest $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 32, in Township 9 South, Range 2 West. The Site occurs on Assessor's Parcel Number (APN) 110-072-26 which is owned by SDG&E (Figure 2).

The Site is located in rural north San Diego County about 5.0 miles east of the City of Fallbrook and approximately 2.0 miles west of the unincorporated community of Pala (Figure 3). The Site

occurs at a mean elevation of approximately 400 feet above mean sea level (AMSL) on a gently sloping alluvial fan. The Site does not have any undisturbed natural habitat within the proposed Project impact areas. The majority of the Site has been used for agriculture and is occupied by a former citrus grove. A fenced SDG&E storage area occurs just south of the Site on the adjacent parcel and is an area that is anticipated to be used as a temporary construction laydown area.

North of the Site, the ground slopes uphill to a ridgeline that surrounds the Site to the northeast, north and west at elevations of up to 1,700 feet AMSL. The ridgeline and other local terrain prevent views of the Site from any substantial distance. The area is not visible from any regional population center or major transportation corridor such as I-15 which is approximately 3 miles to the west.

1.3 Location of Mitigation Area

The centroid of the mitigation site is located at approximately 33°21'37.26"N and 117°6'39.29"W within the northern corner of the 8.5-acre Project Site (Figure 4). Regional access to the mitigation site is the same as to the proposed Project Site.

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SOURCE:

Virtual Earth, 2006.

APPROXIMATE SCALE (FEET)



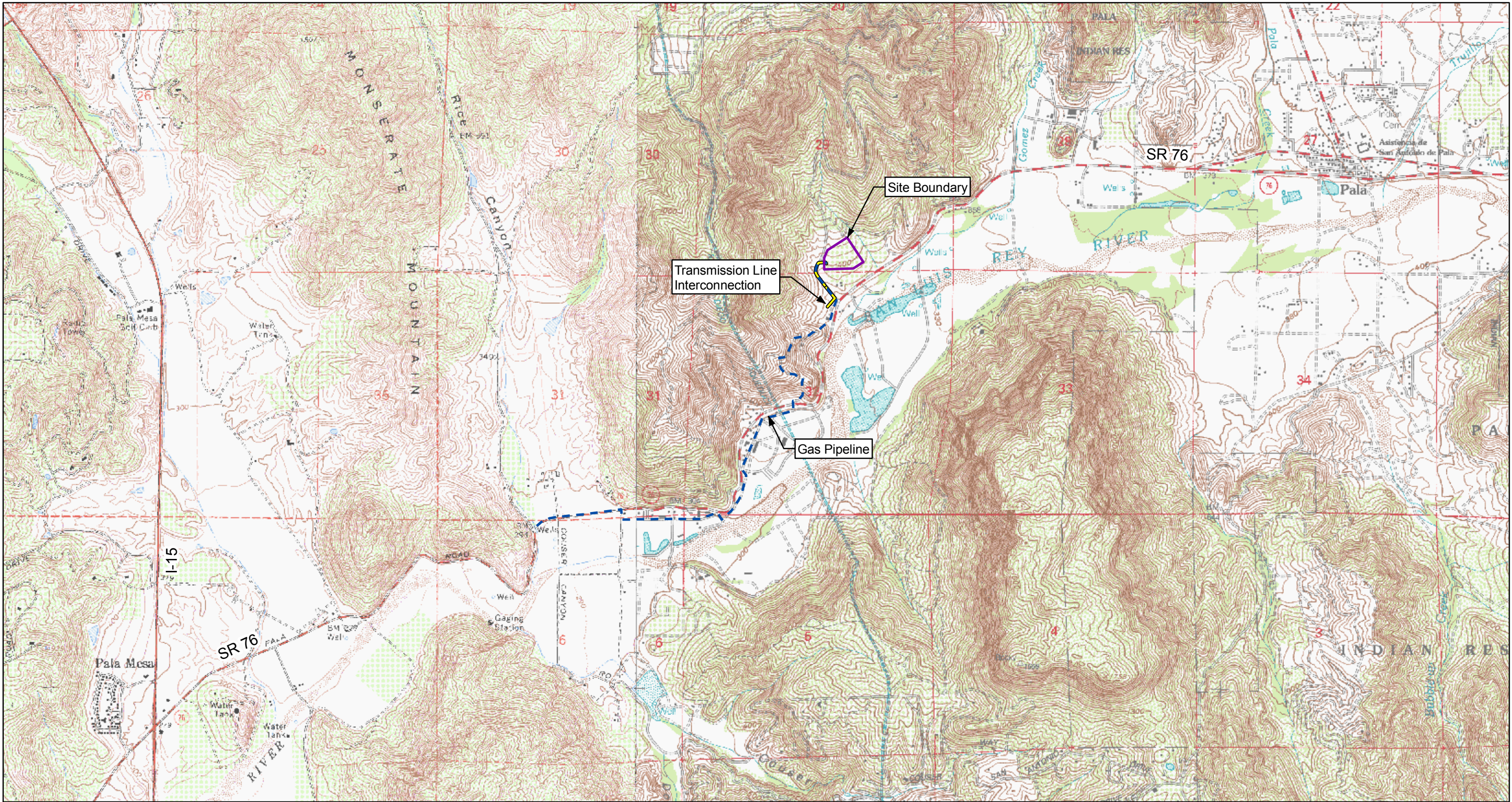
PROJECT: 125158

FACILITY:

ORANGE GROVE PROJECT
SAN DIEGO COUNTY, CALIFORNIA

PROJECT VICINITY MAP

FIGURE 2



G:\Orange_Grove-125158\MXD\USGS for CEC.mxd

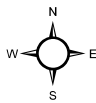
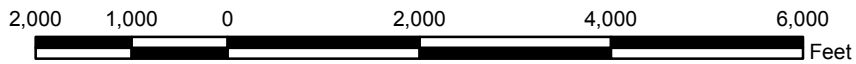


Figure 3
Project Location
Orange Grove Project
San Diego County, CA

1" = 2,000'



Source:
USGS Topographical Quadrangles:
Pala, Bonsall





- ☆ Parry's Tetracoccus Stands (from 2007 & 2008 survey data)
- Site Boundary
- Underground Electrical Transmission Line
- Parry's Tetracoccus Mitigation Area
- Fuel Modification Zones
- Limit of Disturbance
- Proposed Natural Gas Pipeline

Source:
Aerial Photography from ESRI Imagery_World_2D

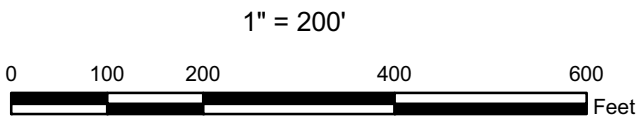


Figure 4
Proposed Parry's tetracoccus
Mitigation Site
Orange Grove Project

2.0 MITIGATION SITE EXISTING CONDITIONS

2.1 SITE DESCRIPTION/GENERAL CONDITIONS

The mitigation area is located within the northern corner of the Site at the edge of an area that is a former citrus grove. The site is adjacent to existing live oak woodland to the immediate north, nonnative grassland to the east, coastal sage scrub habitat to the west and an existing SDG&E storage yard and Pala substation to the south. A gravel mining facility within the San Luis Rey River is located on the south side of SR 76.

The site is characterized by being on a gently sloping alluvial fan of Las Posas series soil with some gabbro soil inclusions. Elevations on site range from approximately 440 feet AMSL in the northern portion of the site to approximately 360 feet AMSL near SR 76.

2.2 GENERAL BIOLOGICAL RESOURCES

Surveys of the Site were conducted on March 14 and June 20, 2007 and February 7 and 12, 2008. In addition, a general botanical survey was conducted May 19 to 22, 2008. The mitigation site is located within an area that was a former orchard. The orchard has not been irrigated for at least 5 years and is no longer viable as an orchard. Most of the orchard's trees have not yet been cut or removed from the Site. Vegetation found in the orchard understory and between trees consists of non-native grasses and herbaceous broadleaf species, similar those found in the non-native grassland. Since the Site has not been maintained, a few individuals of coastal sage shrub species have established within the Site.

2.3 SOILS

Las Posas Stony Fine Sandy Loam 9-30% Slope (LrE) is the dominant soil type within the Site and mitigation area. Las Posas series consists of well drained, moderately deep stony fine sandy loams with a clay subsoil (Bowman, 1973). They occur on moderately sloping to steep uplands under chaparral or grass-oak vegetation. Las Posas soils have massive, hard, reddish brown, slightly acid, fine sandy loam or loam A horizons low in organic matter (<1%). They have dark reddish brown to dark red, neutral, heavy clay loam or clay Bt horizons (National Cooperative Soil Survey, 1964).

Steep Gullied Land (StG) is present in the western portion of the Site but not within the mitigation area. This series consists of strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock (Bowman, 1973).

2.4 SENSITIVE BIOLOGICAL RESOURCES

Focused surveys were conducted for the Project for potentially occurring sensitive species. One sensitive plant species was detected within the proposed impact area for the Project. Sources used for determination of sensitive biological resources are as follows: for wildlife, US Fish and Wildlife Service (USFWS 2000), California Department of Fish and Game (CDFG 2005a,c), Murphy (1990); for plants, USFWS (2000), CDFG (2005b,c), and California Native Plant Society (CNPS, 2001) including any revisions provided on <http://www.cnps.org/inventory> (Accessed August 2008); and for habitats, Holland (1986).

2.5.1 Sensitive Plant Species

One regionally sensitive plant species, Parry's tetracoccus (Picrodendraceae, formerly Euphorbiaceae), was detected within and adjacent to the proposed Project area. This species does not have any federal or state sensitivity status but is listed by CNPS as a List 1B.2 species. This designation by CNPS means that the organization considers this species to be rare, threatened or endangered in California and elsewhere.

2.5.2 Sensitive Wildlife Species

No sensitive wildlife were found near the proposed mitigation site.

2.5.3 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Habitat linkages may function as wildlife corridors for some species and permanent habitat for others. Wildlife corridors and habitat linkages assure the continual exchange of genes between populations, provide access to adjacent habitat areas for foraging and mating; allow for a greater carrying capacity, and provide colonization routes following local population extinctions or habitat recovery from ecological catastrophes (*e.g.*, fires).

The Site does not function as a viable wildlife corridor or habitat linkage as it is a non-viable citrus grove previously used for agricultural purposes. The San Luis Rey River functions as the major wildlife corridor and habitat linkage in the vicinity of the proposed Project area, located south of all project disturbances. The Site has minimal potential to contribute as a "stepping-stone" for dispersal of wildlife to the San Luis Rey River from naturally occurring habitats to the north of the Site.

2.5 EXISTING BIOLOGICAL FUNCTIONS AND VALUES

The area proposed for Perry's tetracoccus mitigation currently provides relatively low wildlife function and value as it is an open area at the northern corner of the proposed Site within a former citrus grove. It totals approximately 0.09 acre and is sparsely vegetated, and located adjacent to coastal sage scrub habitat where the dominant plant species are native plant species found throughout San Diego County.

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3.0 MITIGATION PROGRAM

As previously stated, construction of the proposed Project will result in permanent impacts to a total of 23 Parry's tetracoccus individuals. Mitigation for the loss of these 23 individuals will be provided by the establishment of approximately 23 Parry's tetracoccus individuals (100 percent of the impacted amount) within the 0.09 acre onsite mitigation area (Figure 4).

This Conceptual Plan includes the restoration implementation strategy for compensatory mitigation for impacts to 23 Parry's tetracoccus individuals and this plans use, in whole or in part, is within the project biologist's discretion so that the success criteria can be obtained in the most feasible and cost-effective manner.

3.1 MITIGATION AREA GOALS AND OBJECTIVES

The goal of the Conceptual Plan is to ensure mitigation for impacts to Parry's tetracoccus caused by the implementation of the proposed Project. Occupation of the site by species other than Parry's tetracoccus is not a requirement for successful completion of the mitigation as outlined in the Conceptual Plan.

3.2 HABITAT TO BE ESTABLISHED

The mitigation program for the proposed Project does not require the establishment of any habitats to be considered successful. However, proposed habitat creation and enhancement will provide habitat functions.

Mitigation implementation for the 0.9 acre area will begin with exotic vegetation and weed removal, installation of a temporary irrigation system, and planting of Parry's tetracoccus container stock. To help to ensure success with the mitigation program, the removal of exotic invasive species will occur within the mitigation site boundaries.

3.3 REVEGETATION MATERIALS

Plant materials for the mitigation planting should include container stock of Parry's tetracoccus derived either from cuttings or grown from seed. Implementation of this Conceptual Plan should be coordinated among a qualified habitat restoration contractor, the project biologist, and the nursery providing the plant materials from appropriate nursery stock. Plant material may be

propagated from Tree of Life Nursery in San Juan Capistrano, Las Pilitas Nursery in Escondido, El Nativo Nursery in Azusa, Matilija Nursery in Moorpark, or an alternative source approved by the project biologist.

Standard planting procedures should be employed for installing container stock. Planting holes should be approximately twice the width of the rootball and as deep. If dry soil conditions exist at the time of plant installation the planting holes should be filled with water and allowed to drain immediately prior to planting. Backfill soil should contain no amendments or fertilizers unless recommended by the results of soil tests and project biologist recommendations.

Appropriate timing of planting will limit the need for supplemental watering and will increase the survival of the plants. The best survival rates are generally achieved when container plants and seed are installed between November 15 and 15 April. Planting and seeding at the site should be timed to take advantage of seasonal rainfall patterns and should be accomplished no later than early spring.

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4.0 IMPLEMENTATION PLAN

The following program describes recommended implementation measures for the creation and enhancement of the desired upland habitat and establishment of Parry's tetracoccus. The project biologist shall be free to implement any of these, or additional implementation measures as appropriate in order to meet applicable success criteria.

4.1 RATIONALE FOR EXPECTING SUCCESS

The following factors were considered in the development of this plan and are expected to contribute to the anticipated success of the proposed mitigation program. Locations for restoration on the mitigation site are adjacent to viable and self-sustaining stands of the impacted species indicating correct environmental conditions to support the species. This plan recommends the use of temporary irrigation to promote establishment and survival of Parry's tetracoccus. Invasive non-native weeds that could displace desirable native plant species within the mitigation site should be removed and controlled. If possible, Parry's tetracoccus should be propagated by cuttings or from seed collected from the individuals that will be impacted by implementation of the proposed Project in order to maintain genetic integrity and increase the potential for long-term success. Otherwise, plant materials should be acquired as indicated in Section 3.3 of this plan. Testing of the soil within the mitigation site is recommended prior to any planting or seeding activities occurring within the mitigation area to ensure that the citrus grove and agricultural practices utilized during its time as a production crop has not adversely affected the soil which could hamper the establishment of Parry's tetracoccus within the mitigation site. If the soil is found to have nutrient deficiencies or chemical residues from the prior agricultural activities a certified soil scientist should be contracted to rectify the problem(s) prior to commencement of any planting or seeding activities.

4.2 PRELIMINARY SCHEDULE

Upon appropriate approvals, implementation of the revegetation program is anticipated to begin in the Fall 2009, when cuttings and/or seedling container stock is deemed mature enough to survive transplanting to the mitigation site, or suitable container stock is available from other sources. Updates to this schedule will be provided to all parties involved in the mitigation plan, as necessary (Table 1).

TABLE 1
Preliminary Mitigation Schedule

Task	Date
Site Clearing & Soil Preparation/ Perimeter Exotic Removal	Fall 2009 or at the completion of the avian breeding season in 2009
Installation of temporary irrigation system	Fall 2009 following site clearing and soil preparation
Weed/exotic removal and grow-kill cycles	Fall 2009 following site preparation if applicable
Planting container stock	Early Winter 2009 when site preparation is complete
Hydroseed Application	Winter 2009-10 following planting of Parry's tetracoccus container stock
Completion of installation/assessment of site installation and perimeter invasive control	Following completion of construction and 120-Day PEP
5-year biological monitoring and maintenance	To begin upon successful completion of the 120-Day PEP
Final sign-off	2015 at the end of year five monitoring and maintenance period

4.3 SITE PREPARATION

The landscape contractor should be responsible for site preparation which includes invasive weed species removal and soil preparation. Before restoration work begins, the limit of work boundary should be delineated and staked to ensure that the contractor stays within the limit of work and the proper acreage is revegetated. Clearing of trees and shrubs and mitigation site preparation should be performed outside the migratory bird nesting season (generally March 15 to August 30), where feasible. However, if vegetation removal does occur during this time period, appropriate bird surveys should be performed in accordance with applicable State and Federal law.

During site preparation, all invasive weed species, (*i.e.* artichoke thistle, fennel, pampas grass, black mustard, tocalote, castor bean, brome grasses etc.) should be removed or treated within the mitigation area. The initial weed control effort could involve chemical and/or mechanical treatment of non-native broadleaved species, such as tocalote, fennel, and black mustard in the mitigation area. Prior to the installation of native seed and container plants "grow and kill" weed removal treatments could be conducted by the landscape contractor by activating an irrigation system over an approximately two-week period to encourage non-native seedling emergence. When weeds have begun to grow a foliar application of an appropriate systemic herbicide could be applied to kill target weeds. Additional cycles could be required as recommended by the project biologist. Any herbicide application should be conducted in accordance with label instructions under the direction of a state-certified and qualified pesticide applicator. Application of herbicides in this manner can be very effective in the removal of invasive exotic

plant species; however, sloppy or imprecise application of herbicides can negatively impact desired native plant species within and immediately adjacent to the mitigation area.

Soil testing should be conducted to determine the exact chemical properties of the soil to determine if the site possesses the appropriate components to support Parry's tetracoccus. If the existing soil chemistry is not suitable for Parry's tetracoccus proposed to be applied to the mitigation site the soil, the project biologist should determine if the site needs to be amended with soil conditioners or if the site needs to be compacted or decompacted to reflect naturally occurring soil conditions within the general vicinity of the mitigation area. Soil samples could be collected by the project biologist and/or maintenance contractor and laboratory analysis could be conducted to evaluate existing soil conditions in the mitigation area. Data collected from soil samples would dictate appropriate amendments which could be added to the mitigation area, the possibility of soil leaching, or whether mechanical soil preparation is needed.

Excessive soil compaction or limited soil fertility may require areas to be mechanically treated. Treatment may require portions of the mitigation area to be mechanically ripped to a depth of approximately 18 inches. Soil fertility may require the ripped soil to be treated with appropriate soil amendments to make the soil suitable for installation of native plant species. Following soil manipulation and/or addition of amendments the surface of the soil should be fine graded to best accept container plant installation and application of seed by hydroseeding or imprinting. BMPs shall be incorporated as an erosion control measure where applicable. Soil amendments may also be added to the hydroseed slurry if recommended by the project biologist.

4.4 MITIGATION AREA EXOTIC REMOVAL

To ensure the long-term success of the mitigation area the landscape contractor should be responsible for the removal and follow up treatment of target invasive exotic weed species within the mitigation area. Invasive weed removal would include the one time removal and follow-treatments of exotic weeds through the Project's 120-Day plant establishment period (PEP). Invasive weed species which would require treatment includes pampas grass, castor bean, artichoke thistle and fennel. Success of the perimeter invasive exotic treatments is predicated on eliminating the reoccurrence of target weed seedlings. The project biologist may recommend additional treatments to control persistent invasive plant species within the mitigation site. Timing restrictions due to the avian nesting season, treatment and removal procedures are discussed in Section 4.3, above.

4.5 TEMPORARY IRRIGATION SYSTEM

It is recommended that a temporary above-grade irrigation system provide supplemental irrigation to the mitigation area to ensure Parry's tetracoccus container stock and seed installed within the mitigation area become established. The irrigation system should only be used until the plants are established such that they can survive on their own from seasonal rainfall. It is expected that an irrigation system would be shut-off and removed from the mitigation site at the end of year three of the five-year monitoring and maintenance period which is dependent upon the level of plant establishment achieved by the end of year three. Watering onsite would gradually be decreased prior to the irrigation system being abandoned to allow the plants to become acclimated to the site's natural hydrology. If the container plants and seed mix respond well and establish before the end of the third year of the five year monitoring and maintenance period an irrigation system could be removed early.

The irrigation system should be installed as an above-ground system so that irrigation equipment could be easily removed once the system has been decommissioned and the site has been approved and signed-off by the CEC. The irrigation system could utilize water from the Project Site landscaping irrigation system. Drip irrigation is recommended to reduce the total volume of water necessary to be applied to the site for successful establishment of Parry's tetracoccus, and to limit irrigation to weedy species. Irrigation should be installed by the landscape contractor and approved by the project biologist to ensure adequate coverage within the mitigation area. Any irrigation system is expected to be abandoned by the end of the third year and all above-ground components of the system should be removed from the site at the end of the five-year period.

4.6 EROSION CONTROL

It is unlikely that the mitigation area will suffer from erosion problems; however, erosion control measures such as silt fencing or fiber rolls should be maintained onsite following construction and planting of the mitigation area until the ground surface is stabilized and vegetation becomes established. The need for and location of erosion control in the mitigation area shall be determined in the field by the project biologist and maintenance contractor.

4.7 120-DAY PLANT ESTABLISHMENT PERIOD

During the 120-Day PEP, following the container plant installation and seeding, the project biologist should monitor site conditions including irrigation timing and efficiency, seedling germination, container plant survival and soil erosion to determine if the plants are becoming

adequately established and to verify that the seed application has been successful. If the seed application has been successful and adequate germination occurs then rapid seedling emergence should limit the need for erosion control devices. Potential remedial actions if germination of the seed mix is not sufficient include reseeding, installation of additional erosion control devices and follow-up weed control.

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5.0 FIVE-YEAR MONITORING AND MAINTENANCE

The purpose of the five-year monitoring and maintenance period is to provide guidelines for maintenance and biological monitoring of the mitigation area. All maintenance activities will occur in consultation with the project biologist. The maintenance period will begin upon acceptance of the mitigation site installation by the project biologist at the end of the 120-Day PEP and is scheduled for five years. The maintenance period will conclude after five years if the success criteria established in Section 6.1 of this plan is met.

Because the goal of this project is to establish a natural system that can support itself with little or no maintenance, the primary focus of the monitoring and maintenance plan is concentrated in the first few seasons of plant growth following the initial revegetation effort when annual and perennial weed species can easily out-compete Parry's tetraococcus. The intensity of the maintenance activities is expected to subside each year as the native plant materials become more established and local competition from non-native plants for resources on the mitigation site is minimized through direct removal and treatment of non-native plant species. The early spring through early summer will be the time period where the most effort will be required to control and eradicate non-native plant species within the mitigation area. However, long-term maintenance concerns for the site should include removal of non-native exotic and invasive plant species adjacent to the site and potential establishment and introduction of non-native plant species from wind-borne seed.

The risk of large scale reinvasion of non-native plants onto the mitigation area can be adequately minimized during the first few years after installation at the mitigation site by following these specific maintenance and management guidelines.

5.1 MAINTENANCE ACTIVITIES

- Areas where container stock are installed and applied should be irrigated when natural rainfall is not adequate to sustain container plants and seed for a maximum of three years after the completion of the 120-Day PEP. The project biologist in conjunction with the maintenance contractor will be responsible for determining the time and duration of all artificial watering. The Contractor should be responsible for implementation of the irrigation schedule to promote plant and seed growth and establishment. The contractor should maintain the irrigation system in proper working order and a log of when and how long the irrigation system is in operation during all watering events.
- Native understory species should not be cleared in the mitigation area unless competition from these species inhibits the growth and establishment of Parry's tetraococcus.
- The mitigation site should not be fertilized during the monitoring and maintenance period unless deemed necessary by the project biologist as a remedial measure to correct soil nutrient deficiencies or increase germination and establishment of Parry's tetraococcus.

- Non-native species may invade the mitigation area and become a problem before or during the establishment of the desired native plant species. Weedy, invasive, non-native species such as fennel, castor bean, pampas grass, tree tobacco tocalote and others as indicated by the project biologist should be removed by hand or other appropriate method as determined by the project biologist, or treated with the appropriate systemic herbicide before they become firmly established within the mitigation site.
- Deadwood and leaf litter of native shrubs should not be removed. Deadwood and leaf litter of non-native species should be removed from the mitigation site only at the direction of the project biologist. Deadwood and leaf litter provide valuable microhabitats for invertebrates, reptiles, small mammals and birds. Non organic trash and debris such as windblown litter, if any, should be removed from the mitigation area on a regular basis at no less than once-per calendar quarter intervals during the five-year monitoring and maintenance period.
- Areas showing excessive erosion within the mitigation area should be promptly remedied with BMPs until they are deemed no longer necessary by the project biologist or the successful completion of the five-year monitoring and maintenance period.

5.2 GENERAL HABITAT MAINTENANCE GUIDELINES

5.2.1 Pest Management/Weed Control

Weeds are expected to be the primary pest problem in the mitigation area during the first several years of the maintenance period; however, native and non-native animal species can be classified as pest species within revegetation sites and removal and exclusion of these species would need to conform to any applicable laws and ordinances. Weeds should be controlled so they do not prevent the establishment of the native species or invade adjacent native habitats. Weeds should be controlled prior to setting seed and removed from the site. If weed species do produce mature fruits prior to removal, care should be taken to remove the fruits whole from the mitigation site without shedding unnecessary seed within the mitigation area. The maintenance contractor should control weeds and invasive exotic species within the mitigation site and where the contractor is unsure of a plants native or non-native status, the maintenance contractor should confer with the project biologist. A combination of physical removal, mechanical treatments (*i.e.* weed whipping) and appropriate herbicide treatments as determined by the project biologist should be used to control non-native and invasive plant species.

Removal of weeds with hand held tools is the most desirable method of control for annual and perennial exotic plant species and should be used around individual plantings and native seedlings as much as is feasible. All chemical control should be pre-approved by the project biologist and the herbicide used should be compliant with any applicable regulations concerning the application of herbicides within the State of California and County of San Diego. If feasible as determined by the project biologist, any native plants killed by herbicide applications should be identified to species and should be replaced by the contractor. Where replacement is not

feasible the contractor, at the direction of the project biologist, should collect and apply native seed collected within or immediately adjacent to the mitigation area to the incidental impact area.

5.2.2 Irrigation System

The irrigation system should be checked regularly to ensure proper operation, adequate coverage of the revegetated area and that there are no significant leaks in any PVC pipe, joints or irrigation heads. Problems with the irrigation system should be repaired immediately upon detection to reduce potential native plant mortality and establishment of non-native plant species. The frequency and duration of irrigation applications should be adjusted seasonally by the maintenance contractor in coordination with the project biologist to meet habitat needs. It is assumed that the majority of the supplemental irrigation, if any, will be from late spring to the first rains in the fall; however, if drought conditions occur it is recommended that the irrigation system be utilized as needed to ensure establishment of Parry's tetradococcus. The irrigation system should be used as necessary during the first three years of the five-year monitoring and maintenance period and should be terminated at the end of year three to ensure that the site is self-sustaining for at least two years (*i.e.*, two summers) prior to completing the five year monitoring period. The irrigation system is expected to be completely removed from the mitigation area at the successful completion of the revegetation and enhancement. The timing of cessation and removal of any irrigation system shall be determined by the project biologist but it is anticipated that the irrigation system would be removed only after successful completion of the mitigation.

5.2.3 Clearing and Trash Removal

Trash consists of all man-made materials, equipment, or debris dumped, thrown, blown, washed into or left within the mitigation area. It is recommended that trash be removed by the maintenance contractor at the completion of each maintenance visit and deposited at an appropriate facility (*e.g.* county dump). Pruning or clearing of native vegetation should not be allowed within the mitigation area unless extensive growth is causing a maintenance problem outside of or within the mitigation area. Any pruning or clearing of native vegetation should be approved by the project biologist prior to the commencement of any pruning activities. Deadwood and leaf litter should be left in place within the mitigation area to replenish soil nutrients and organic matter.

5.3 SCHEDULE OF MAINTENANCE INSPECTIONS

It is recommended that the project biologist perform quarterly monitoring inspections during the 5-year monitoring and maintenance period. Recommendations for maintenance efforts will be based upon these site observation visits. Weed control by the maintenance contractor should be conducted monthly during the first year of the monitoring and maintenance period, and then quarterly during years two through five of the monitoring and maintenance period, or as directed by the project biologist.

6.0 MONITORING PLAN

Monitoring of the mitigation site has a two-fold purpose: 1) To monitor the progress of the mitigation area by assessing Parry's tetracoccus success; and 2) To direct and monitor the maintenance activities and determine remedial actions in a manner that ensures that appropriate maintenance occurs in a timely manner. The monitoring should be performed by the project biologist or a qualified biologist or habitat restoration specialist.

It is recommended that the project biologist be responsible for monitoring activities of the installation contractor in preparation of the mitigation area including perimeter invasive removal, site clearing and preparation, irrigation installation, Parry's tetracoccus planting, monthly monitoring during the 120-Day PEP and quarterly monitoring during the five-year monitoring and maintenance period. The project biologist should communicate and coordinate with the landscape contractor to assure the timely performance of project activities. The project biologist should prepare an "As-Built" letter report within 60 days of completion of the installation period (end of 120-Day PEP), and Annual Reports each year on the anniversary date during the five-year monitoring and maintenance period, to document implementation and success.

6.1 PERFORMANCE STANDARDS

Performance standards have been established for the mitigation area based on optimal vegetative development within a properly functioning habitat of the same type. Specific performance criteria is targeted for each installation anniversary date through the completion of the five-year monitoring and maintenance program. Standard success criteria are listed in Table 2.

TABLE 2
Mitigation Site Performance Standards

Time Period	Maximum Percent Weed Cover	# of Parry's Tettrococcus¹
120-Day PEP	5%	3
Year 1	5%	5
Year 2	10%	7
Year 3	15%	12
Year 4	10%	17
Year 5	5%	23

¹Percent container plant survival can be augmented by recruitment of Parry's tetracoccus seedlings from container stock fruit and seed production.

Performance standards are discussed in reference to 'target vegetative species' which are Parry's tetracoccus. Non-native annual grass species that are not considered highly invasive (e.g., *Avena* spp., *Lolium* spp., *Bromus hordeaceus*, *B. diandrus*) are non-target species which should be removed from the site unless they are performing a beneficial function that the target native species are not, such as soil or bank stabilization, and can be left in place until native species are

able to perform the same function. Natural recruitment by non-invasive non-native grass species, native coastal sage scrub or other native species in the mitigation area is also considered a sign of success.

These performance criteria shall be utilized to assess the annual progress of the mitigation area, and are regarded as interim project objectives designed to reach the final goals. Fulfillment of these criteria will indicate that the mitigation area is progressing toward the long-term goals of the plan. If the restoration efforts fail to meet the performance standards in any one year, the project biologist will recommend remedial actions to be implemented the following year which are intended to enhance the vegetation within the site to a level of conformance with the original standard. These remedial actions may include re-seeding, applying soil amendments, additional weed control measures, erosion control, or adjustments to irrigation and maintenance practices.

6.2 MONITORING METHODS AND SCHEDULE

It is recommended that the project biologist conduct quarterly qualitative monitoring visits throughout the 5-year monitoring and maintenance period. Permanent vegetation transect points should be established within the mitigation area at appropriate representative locations to achieve representative samples of the site. Transects could be used to determine compliance and achievement of the restoration success standards. A minimum of twenty-five (25) sampling points is recommended. Qualitative assessment of the mitigation area should be used during the first two years to assess percent survival of container plants and percent cover of target vegetation and weed cover. Starting in the spring of year three, a point intercept method could be used to determine percent target vegetation cover and weed cover.

Qualitative monitoring should include reviewing the health and vigor of container plants, checking for the presence of pests and disease, soil moisture content and the effectiveness of the irrigation system, erosion problems, invasion of weeds/exotics, and the occurrence of trash and/or vandalism. Contractor maintenance activities and performance should be reviewed as well by the project biologist. Each monitoring visit should be followed by a summary of observations, recommendations, and conclusions.

Quantitative evaluation of container plant survival could be determined through counts of dead container plants. The fall site visit should assess plant mortality and recommend container plant replacement, if needed, at the conclusion of the first year of the monitoring and maintenance period. Cover of invasive exotics could be determined by visual inspections of the mitigation site during all site visits to assure that invasive species are not present. Removal of invasive species should be recommended immediately if such species are detected.

6.3 ANNUAL MONITORING REPORTS

It is recommended that an annual yearend report be prepared by the project biologist, through the end of the five-year monitoring and maintenance period. The monitoring reports should describe the existing conditions of the site, compare existing conditions with the performance guidelines,

identify any shortcomings of the revegetation program, and recommend remedial measures necessary to help guide the project to a successful completion of the revegetation program.

The reports should also include:

- A list of names, titles and companies of all persons who prepared the content of the annual report and participated in maintenance and monitoring activities;
- Prints of representative monitoring photographs; and
- Maps identifying the monitoring area, planting zones, etc. as appropriate.

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7.0 COMPLETION OF COMPENSATORY MITIGATION

At the end of the five-year monitoring period and if the success criteria in Section 6.1 is met, the applicant shall notify the CEC, or appropriate resource agency, upon submitting the annual report for the fifth and/or final year and request acceptance of the site and release from any further responsibility at the site. Early release may be possible if success criteria/performance standards are met early and the CEC agree with the level of establishment and agree to release the project from the mitigation requirements.

Following the receipt of notification of completion the CEC may visit the site to confirm completion of the mitigation efforts and issue letters of formal acceptance.

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8.0 REFERENCES

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